

ABSTRACT OF THE DISCLOSURE

A filter system including a method for self cleaning the filter system of an electronic equipment enclosure where air flow is monitored either by monitoring fan performance or air flow velocity through the enclosure. The system includes two filters elements, an upstream ASHRAE or HEPA filter element to block particulate matter and a downstream PTFE filter element to block water vapor. The ASHRAE or HEPA filter element is relatively inexpensive and easy to clean. The PTFE filter element is more expensive and difficult to clean. Thus, the cheaper filter is used to protect the more expensive filter from contaminants and to increase its useful life. The method of self cleaning includes stopping the fan when a signal is received indicating a predetermined resistance to air flow which is a function of blockage of the filter elements, thereafter operating the fan at an increased rotational velocity to determine whether the fan itself is malfunctioning, thereafter slowing and stopping the fan to allow the fan to be reversed, rotating the fan in reverse for a predetermined period of time, such as five minutes, thereafter slowing and stopping the fan and returning the fan to its usual rotational velocity and direction. If the resistance to air flow is still above a predetermined level, the fan is again slowed, stopped and reversed and then returned to normal operation. The reversal operation can be conducted a multiple number of times, however, after a predetermined number, a signal is sent requesting maintenance.